

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. 95-175
WASTE DISCHARGE REQUIREMENTS FOR:**

West County Landfill, Inc., TPS Technologies, Inc.,
Richmond Sanitary Service, and West Contra Costa Sanitary Landfill, Inc.
West Contra Costa Class II Landfill - Thermal Soil Treatment Facility
Richmond, Contra Costa County

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. West Contra Costa Sanitary Landfill, Inc. and TPS Technologies submitted a Report of Waste Discharge (ROWD) to the Board on March 3, 1995, for the design, construction, and operation of a Thermal Soil Treatment Facility (TSTF) to process petroleum contaminated soils at the West Contra Costa Class II Landfill (WCCCL). West County Landfill, Inc. currently owns WCCCL, as ownership of the landfill was transferred from Richmond Sanitary Service in 1990. West Contra Costa Sanitary Landfill, Inc. currently operates the WCCCL facility. These three named business entities shall hereinafter be referred to as the discharger.
2. The project site is located on 350 acres at the west end of Parr Boulevard in the City of Richmond and unincorporated portions of Contra Costa County (Figure 1). The property consists of a 28 acre Class I Hazardous Waste Management Facility (HWMF) and the 160 acre Class II landfill (Figure 2). The TSTF will be constructed on 3.2 acres of a closed portion of the Class II landfill. Detail of the TSTF site is shown in Figure 3. The final cover will be placed over this portion of the WCCCL prior to construction of the TSTF.
3. TPS Technologies will design, develop, and operate the TSTF at this location. Treated soil from this facility will be used for interim/daily cover and foundation material for final cover during the closure construction activities at WCCCL. The facility is designed to process an average of approximately 250,000 tons of soil annually and has an anticipated lifespan of 10 years.

PURPOSE OF ORDER

4. The primary objectives of this order are to: 1) provide guidance for the construction of final cover in the portion of the WCCCL beneath the proposed TSTF, such that the final cover complies with current regulations of Chapter 15, Division 3, Title 23 of the California Code of Regulations; and 2) establish Waste Discharge Requirements for the construction, operation, and monitoring of the TSTF, including waste acceptance criteria (Specification No. 23) and minimum treatment standards as stated in Specification No. 24. Treated soils will be used as interim/final cover and as foundation material for closure activities in other portions of the

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WCCCL. This order only applies to the portion of the facility on which the TSTF will be sited and locations where treated soils will be used within the WCCCL, and does not alter the Waste Discharge Requirements for other portions of the WCCCL.

5. This order permits the thermal treatment of petroleum contaminated soils only, and explicitly excludes hazardous wastes. Averaged maximum concentrations acceptable for treatment are specified in Prohibition No. 1 and treated waste material will be used as daily cover and foundation material for final cover construction at the WCCCL. The facility will use a Low Temperature Thermal Desorption plant for treatment of petroleum contaminated soils.

SITE DESCRIPTION AND HISTORY

6. The TSTF will treat designated petroleum contaminated soils and consists of a contaminated soil storage building, a thermal treatment facility, and a treated soil stockpiling area. Treated soil from this facility is intended for use as daily cover and foundation material for final closure at the site. Waste Discharge Requirements delineated within this order are limited to those portions of the site that are directly impacted by final cover installation and construction, operation, and maintenance of the TSTF, and do not supersede any existing Waste Discharge Requirements for any other portion of WCCCL.
7. The Class II WCCCL first began accepting wastes, including municipal solid waste, sewage sludge, liquids, and hazardous waste, in 1953. Hazardous waste accepted included liquids, sludges, and solids contaminated with heavy metals and oil, and other miscellaneous industrial wastes. After 1976, no hazardous wastes other than asbestos and infectious waste were accepted at the Class II WCCCL.
8. The adjacent Class I Hazardous Waste Management Facility (HWMF) is currently undergoing pre-closure activities, including solidification of TPCA ponds (CAO No. 91-084), and preparation of CEQA compliance documents. The Department of Toxic Substances Control (DTSC) is acting as the lead agency in the oversight of closure activities at the HWMF.

WASTES AND THEIR CLASSIFICATION

9. The discharger proposes to treat the petroleum contaminated soils including leaded and unleaded gasoline, gasohol, jet fuel, diesel, kerosene, fuel oils, and other acceptable organic compounds. No hazardous waste will be accepted for treatment and contaminated soil shall contain no free liquid. Contaminated soil accepted for treatment and temporary storage at the TSTF will be classified as solid designated waste under Section 2522, Chapter 15, Title 23, CCR (Chapter 15) because leachable concentrations of organic compounds in the soil are above water quality objectives for the respective compound. Wastes listed in 40 CFR 261 will not be accepted at this facility, nor will wastes with excessive heavy metal concentrations as

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per Section 66261.24(a)(2)(A), Title 22, CCR or wastes defined in Sections 66261.21 through 66261.24, Title 22, CCR.

10. Treated soil discharged from the TSTF will be classified as inert waste under Section 2524, Chapter 15 as it will not contain contaminants in concentrations above water quality objectives. The TSTF will discharge low moisture, non water soluble, non-decomposable, nonhazardous, inert wastes to the WCCCL.

GEOLOGY

11. The TSTF and WCCCL are located along the bayfront in the western portion of Richmond and Contra Costa County. This location is in the Richmond Basin on a low-lying, tidal mud flat and marsh at the eastern edge of San Pablo Bay, adjacent to San Pablo Creek. Natural terrain surrounding the site is generally flat. The site is bounded by tidelands on the west, natural marshlands on the south, and natural marshlands and San Pablo Bay on the north. The Class I HWMF is located along the southern boundary of the TSTF.
12. The surface and subsurface geology and hydrogeology of the site have been evaluated based on literature review, extensive drilling, aquifer testing, trenching, and review of geotechnical soils analyses.

Stratigraphy

13. The Richmond Basin is filled with a thick sequence of interfingering alluvial fan and estuarine (bay mud) deposits. This sedimentary sequence is predominantly clay with thin layers of sand, silt, and gravel. The thin layers of alluvial sand and gravel at the site are probably associated with ancestral channels of San Pablo and Wildcat Creeks and other drainages. Sand layers in the uppermost 100 feet of the sediments occur within thick clays, and they are found mostly in the top 40 feet. More extensive sand layers, ranging from 1 to 20 feet in thickness, are known to occur below depths of 100 feet. Bedrock is estimated to underlie the bay mud deposits at a depth of approximately 300 feet.

Borings at the site show that fill and a bay mud barrier extend to a maximum depth of 25 feet. Below this, younger bay mud was encountered to depths of 50 to 70 feet. Older bay mud was encountered in borings that extend below these depths.

The younger bay mud is composed of thick layers (up to 50 feet) of very soft to firm, highly plastic, massively bedded clay, silty to sandy clay, and clayey to sandy silts. Interbedded with these plastic materials are 0.5 to 15 foot thick lenses and layers of sand and silty to clayey sand. The sands are commonly well sorted and fine grained with lesser amounts of medium sand with rare fine gravel. The sand layers are predominantly stream and estuarine channel deposits which are characterized by an abundance of shell fragments. In addition, some of the

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fine grained sand and silt deposits resulted from floods and appear to be more extensive in some portions (e. g., northern and north central portions of the WCCCL) of the site.

The older bay mud, encountered at depths of about 50 feet to greater than 70 feet, is predominantly composed of firm to very stiff clay to silty clay with thin (up to 5 feet thick) peaty clay layers. Silty and clayey sand layers occur as a few relatively thin interbeds within the older bay mud. Some of these sand layers appear to be laterally continuous under the western portion of the WCCCL.

Structure

14. There are no known Holocene-active faults within the limits of the site. The closest known Holocene faults posing the most significant seismic hazards to the site are the Hayward Fault, approximately three miles to the northeast, and the San Andreas fault, which passes about sixteen miles southwest of the site.
15. Analysis for liquefaction potential indicates that some portions of the WCCCL site may be potentially liquefiable during earthquakes which affect the site. Drilling logs indicate areas containing well sorted sands with less than 15% clay, many of which are low density as indicated by "modified" standard penetration tests. Subsequent analysis of recent Cone Penetrometer Tests (CPT) indicate that the extent of the sand unit may be much more limited than originally interpreted (Pyke, 1995). Because the WCCCL has a very high water table, these deposits are saturated. The primary areas of potential liquefaction concern are located near the San Pablo Creek channel and along the northeastern perimeter of the landfill (Wahler, 1993). While the potential for liquefaction may exist along the northeast perimeter of the WCCCL, the TSTF is located over 750 feet to the west of the San Pablo Creek area and does not appear to be threatened by these conditions.

SURFACE WATER AND GROUNDWATER

16. Surface Water:

San Pablo Creek is the major surface water drainage in the vicinity of the site, running to the northeast of the property. The northeast, west, and south boundaries of the site are marked by tidal marshlands. The northwest and north boundaries are immediately adjacent to San Pablo Bay.

17. Groundwater:

Groundwater flow beneath the site has been classified into four water bearing zones: surficial, shallow, medium, and deep zones. The surficial zone is the uppermost zone, occurring between +20 and -10 feet mean sea level (MSL). Within the site, much of the surficial zone

consists of refuse and fill. The shallow zone underlies the surficial zone and occurs between -10 and -30 feet MSL. This zone contains only naturally occurring sediments. The medium zone underlies the shallow zone and extends from -30 to -60 feet MSL. No persistent coarse-grained zones were encountered in the thick clay sequence between the base of the medium zone and the top of the deep zone. However, few borings and/or wells have been installed to the deep zone. The deep zone is a single 10-foot thick sand layer encountered at an elevation of about -115 feet MSL. The deep zone is the only zone with groundwater of drinking water quality. The other three zones are brackish and are not usable as a drinking water supply.

18. Historic Background groundwater quality

Background monitoring wells, E-26 and E-61 are adequate for background monitoring. The wells are not located upgradient of the WMU, but are located in similar geologic materials. E-61 was installed in 1987 to intercept and monitor a sand lens in the shallow water bearing zone, and E-26 monitors the surficial zone. In the past, E-25, screened in the medium zone, has been utilized as a background well in conjunction with E-26.

19. Groundwater Degradation

The discharger submitted a Solid Waste Assessment Test (SWAT) on July 1, 1987 pursuant to Section 13273 of the Water Code. Included with the SWAT program was the installation of 27 "M" wells (M-1 through M-27). These wells were screened in the surficial, shallow, and medium water bearing zones. The SWAT results and subsequent verification monitoring indicated that three wells, M-1, M-5, and M-24 located in three different areas along the perimeter of the Class II WMU have detected contaminants. Well M-1 detected 2 to 180 ppb of benzene, toluene, chlorobenzene, and gasoline. Analyses of groundwater from M-5 detected 320 to 15,000 ppb benzene, toluene, ethylbenzene, xylenes, and 2,4-dimethylphenol. M-24 detected 2 to 8.5 ppb of dibenzofuran, flourene, phenanthrene, and acenaphthrene. Additional surficial zone wells (M-28 through M-40 and M-41 through M-46) were installed during subsequent phases. Groundwater in the area has also been impacted by the Class I WMU adjacent to the Class II unit.

20. Beneficial Surface Water Uses: The beneficial uses for San Pablo Bay in the vicinity of the site are as follows:

- Industrial service supply;
- Navigation;
- Contact and non-contact recreation;
- Commercial and sport fishing;
- Wildlife and estuarine habitat;
- Preservation of rare and endangered species;
- Fish migration and spawning;
- Shellfish harvesting.

The beneficial uses for San Pablo Creek in the vicinity of the site are as follows:

- Warm fresh water habitat;
- Wildlife habitat;
- Non-contact water recreation;
- Fish migration and spawning.

21. Beneficial Groundwater Uses: The potential beneficial uses for groundwater deeper than -60 feet (msl), in the vicinity of the site are as follows:

- Domestic supply;
- Municipal supply;
- Agricultural supply;
- Industrial process and service supply; and
- Discharge to San Pablo Bay and wetlands surrounding the site.

SLOPE STABILITY AND LANDFILL SETTLEMENT

22. Slope Stability: As part of the geotechnical evaluation and design of the TSTF, the discharger evaluated the static and seismic stability of slopes and foundation materials under anticipated loads. Initial slope stability analysis indicates that the weight of the fill pad and the overlying building loads yield stability factors of safety below the minimum required values and would likely create slope stability problems in the younger Bay Mud and in the adjacent Class I slurry wall. Engineering controls will be incorporated into the final cover system and into the overlying TSTF foundation layer to achieve the necessary factors of safety. These additional cover and foundation design components and requirements are detailed in Finding No. 26 and Specification No. 20.

23. Landfill Settlement: As a part of the stability analysis of the site, the discharger evaluated landfill settlement beneath the TSTF. The proposed TSTF will be constructed on a portion of the WCCCL where field data indicate that waste is approximately 15 to 30 feet thick. Differential settlement in both the waste and the underlying younger bay muds at this location, in combination with loading from both the TSTF foundation and stockpiled soil, could severely impact the integrity of the final cover if no mitigating engineering controls are built into the cover system. These additional cover design components and requirements are detailed in Finding No. 27 and Specification No. 21.

DESIGN OF WCCCL FINAL COVER

24. A final cover meeting thickness and permeability requirements outlined in Chapter 15, Title 23, will be placed underneath all components of the soil remediation facility, over the existing interim cover, prior to construction of the TSTF. The final cover system design includes the following components:
- A foundation layer that provides structural support with a minimum 1 foot thickness;
 - A clay layer with permeabilities of less than 1×10^{-6} cm/sec and a minimum 1 foot thickness; and
 - A protective soil layer with a minimum thickness of 1 foot.
25. A buffer pad will be placed above the final cover in the vicinity of, and beneath the TSTF; this buffer will serve to protect the integrity and drainage gradient of the underlying final cover. The buffer pad will be constructed of clean geotechnical fill soils
26. Slope Stability: Two components will be added to the final cover design to help achieve the necessary factors of safety for slope stability along the site boundary shared with the Class I HWMF. They are as follows:
- A surcharge of clean soil will be added along the southern boundary of the TSTF site and over portions of the Class I HWMF. A 2:1 slope will be created along the southern boundary of the TSTF property. The surcharge will be added to the area on top of existing grade over the Class I slurry wall along the southern boundary of the property.
 - Several high strength, reinforced uniaxial geogrid layers will be placed at multiple levels within the final cover foundation and in the overlying geotechnical clean fill beneath the TSTF site. The uniaxial geogrid is a mesh web constructed of High Density Polyethylene (HDPE) and elongated in the primary direction of stress.
27. Landfill Settlement: An HDPE biaxial geogrid will be incorporated into this buffer pad to prevent "punching" failure of individual footings due to differential settlement in the landfill beneath the TSTF. The biaxial geogrid will underlie both the contaminated soil receiving area and the thermal treatment unit itself, and extend a minimum of 20 feet beyond the limits of the building/treatment units; this will displace differential settlement over the entire area covered by the biaxial geogrid.

DESIGN OF THERMAL SOIL TREATMENT FACILITY

28. The TSTF will be comprised of three primary operational areas as follows:
- A Contaminated Soil Receiving and Storage area;

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- A Thermal Treatment Unit; and
 - Treated/clean soil stockpile area.
29. The Contaminated Soil Receiving and Storage area will be housed in a concrete and metal sided building. The building will be underlain by a concrete pad and a Leachate Collection and Removal System (LCRS). The LCRS will be situated above the final cover system of the WCCCL. Prior to being fed to the Thermal Treatment Unit, the soil will be screened of any large debris, plastic, metal, and wood through the use of either a rotary or vibratory screen. This debris will then be sorted into nonrecyclable material and recyclable rock, concrete, and asphalt. Non-recyclable material will be landfilled. Representative samples of the recyclable material will then be crushed and analyzed for TPH and BTEX. If certified clean to post thermal process standards (Specification No. 24), the recyclable material will then be used for construction activities such as road base onsite. Recyclable material that still contains soil residue after the initial screening process will be rescreened.
30. The proposed Thermal Treatment Unit is comprised of the components detailed below:
- Feed Hopper;
 - Remediation Processor (Dryer Drum);
 - Cyclone;
 - Filterhouse (Baghouse);
 - Recuperative reactor (Oxidizer);
 - Reconstitution slat conveyor and;
 - Radial stacker stockpiling system.

Feed Hopper - Soils ready for treatment will be loaded into the hopper which deposits the material onto a conveyor belt system which carries the material to the treatment unit. The conveyor system is equipped with hood covers preventing water and wind from contacting contaminated material. The conveyor will also have belt scrapers to keep clean the belts of loose soil.

Remediation processor (Dryer drum) - Contaminated materials are conveyed into the remediation processor and heated to temperatures that vaporize the hydrocarbons. Contaminated material will be heated to a maximum temperature of 900°F and carried through the remediation processor/dryer drum by an inclined drum rotation to the discharge end.

Cyclone - After exiting the remediation processor, airborne constituents (volatilized hydrocarbon compounds and soil particulates) are carried by air stream into the dry cyclone system where large particulates are removed.

Filterhouse (Baghouse) - Exiting the cyclone, these compounds are carried to the filterhouse, where remaining particulate matter is removed from the air stream.

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Oxidizing Chamber/Recuperative Reactor - Gasses exiting the filterhouse are carried by air stream to the oxidizing chamber/recuperative reactor where the vaporized hydrocarbons are destroyed through oxidation at temperatures ranging between 1400°F and 1600°F.

Reconstitution slat conveyor - The treated material leaves the remediation processor and enters the reconstitution slat conveyor, where it is cooled by the addition of water, sufficient to control fugitive dust and remoisturize the treated soil. A secondary filterhouse will be used to mitigate fugitive dust in this cooling process. Fine particles captured in the secondary filterhouse will be recirculated through the treatment unit.

Radial stacker stockpiling system - The processed soil is conveyed to the radial stacker stockpiling system where it is collected in a day pile. This pile contains all soil treated during that day. A composite sample will be collected from this pile to validate the effectiveness of treatment. The soil shall be acceptable for utilization as daily cover and foundation material (with the placement constraint outlined in Specification No. 17) in the landfill after confirmation of treatment to levels specified in Specification No. 24, by a California certified laboratory.

31. The vehicle maintenance area located adjacent to the soil storage building, will be used for routine on-site maintenance of vehicles and equipment. A secondary containment berm will be constructed to contain any spills at this location.

SELF MONITORING PROGRAM

32. Existing Waste Discharge Requirements issued by this Regional Board, require the discharger to monitor groundwater at wells at perimeter points of compliance for both the Class I HWMF and the Class II WCCCL.
33. Soil Acceptance: During the operation of a similar facility in southern California the discharger developed a sampling and reporting protocol that will be modified for use at this facility. The protocol requires the waste soil generator to certify that the incoming material fits into one of the two categories outlined below:

(1) Virgin petroleum products - originating from leaking underground storage tanks in non-industrialized locations. Soil received from these locations will, at a minimum, be analyzed for the following constituents:

- TPH (EPA Method 8015) (for gasoline, diesel, and/or oil, as appropriate); and
- BTEX (EPA Method 8020).

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If soil is from a tank area that may have contained leaded gasolines, the soil will be analyzed as a Virgin petroleum product Source (Type 1), but total lead (EPA 7000 series) will be added to the list of analytes. The WET test will be performed as outlined in the section below, if necessary.

(2) Industrial/Mixed Sources - Soils originating from non-virgin petroleum sites, leaded fuel sites, industrial areas, or mixed origins. The soils will be analyzed for the following constituents:

- TPH (EPA Method 8015 for gasoline, diesel, and/or oil, as appropriate or EPA Method 418.1);
- BTEX (EPA Method 8020);
- Total metals concentrations for Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc;
- Total Organic Halogens (TOX)(EPA Method 9020 or equivalent); and
- Additional tests as necessary to characterize incoming soil and verify that material is non-hazardous as defined in Section 66261.10, Title 22. These test may include PCBs (EPA Method 8080) and soluble metals by the California Waste Extraction Test (WET) for any metals that exceed 10 times the Soluble Threshold Limit Value (STLC).

All incoming waste soils, regardless of origin, are required to provide the following prior to acceptance of material for treatment:

- Source address with a site history;
- Paint filter liquids test (EPA Method 9095) or visual observation and certification that soil contains no free liquids;
- Certificates of analyses from a California certified laboratory verifying that the incoming waste soil is not hazardous as defined in Section 66261.10, Title 22;
- Generator certification that the waste soil is non-hazardous and meets all the acceptance criteria for treatment at this facility; and
- Composite soil sampling frequency, map location, and sampling protocol.

Treated soils shall be sampled to confirm soil treatment to levels stated in Specification No. 24.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

34. The Contra Costa County Community Development Department (County) prepared a mitigated negative declaration, and it was adopted by the Contra Costa County Board of Supervisors on May 9, 1995, in accordance with California Environmental Quality Act (Public Resources Code Section 21082.1). The mitigated negative declaration completed by the County found no significant impacts to water as a result of the TSTF.

COMMENTS

35. The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) on December 9, 1991. This Order implements the water quality objectives stated in that plan and its subsequent amendments.
36. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with an opportunity to submit their written views and recommendations.
37. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, the discharger, its agents, successors and assigns may accept waste for treatment at the TSTF located at the WCCCL providing compliance is maintained with regulations adopted under Division 7 of the California Water Code and with the following:

A. PROHIBITIONS

1. Waste acceptable for treatment at this facility shall be limited to hydrocarbon contaminated soils including, but not limited to, leaded and unleaded gasoline, gasohol, fuel oils, diesel fuel, kerosene, and jet fuel. Soils entering the Thermal Treatment Unit shall have an average Total Petroleum Hydrocarbon concentration of not greater than 15,000 mg/Kg.
2. No hazardous waste of any kind shall be accepted for treatment as defined in Title 22, of CCR., Division 4.5, Section 66261.3.
3. Contaminated soil containing concentrations of heavy metals above those listed in Section 66261.24(a)(2)(A), Title 22, of CCR., shall not be accepted for treatment.

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4. Contaminated soil containing free liquid shall not be accepted for treatment, storage, or disposal at this facility. The facility operator shall verify through paint filter test (EPA Method 9095, SW-846) or through visual inspection that no free liquid is present in any received soils, prior to acceptance for treatment.
5. Contaminated soil shall not be stored in locations other than the Contaminated Soil Storage building. Contaminated soil shall not be placed on any portion of the facility that is not underlain by an LCRS.
6. The receiving and storage of contaminated soil, and disposal of treated soil shall not create a pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.
7. All TSTF structures, facilities, and activities shall have no adverse effect on the Class II WCCCL cover or any landfill system, nor shall there be any adverse impact to the Class I HWMF or adjacent facilities.
8. The discharger, or any future owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:
 - a. Surface Waters
 1. Floating, suspended, or deposited macroscopic particulate matter or foam.
 2. Bottom deposits or aquatic growths.
 3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
 4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
 5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of this unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

1. The groundwater shall not be degraded as a result of the TSTF waste treatment or treated soil disposal operations.

B. SPECIFICATIONS

1. All reports pursuant to this order shall be prepared under the supervision of a registered civil engineer, California registered geologist, or certified engineering geologist.
2. Water used during thermal treatment process and disposal operations shall be limited to a minimal amount necessary for construction, dust control, and fire suppression.
3. The site shall be protected from any washout or erosion of wastes or covering material and from inundation which could occur as a result of a 25 year, 24-hour precipitation event, and shall be sited above the 100-year recurrence flood level.
4. The TSTF site shall be designed with appropriate engineered control systems to ensure that there will be no adverse water quality impact from the site, either beneath or adjacent to the site, from the untreated waste stockpile areas or from the thermal treatment area itself. The Contaminated Soil Receiving and Storage area shall have a minimum upper working surface of 6 in. of reinforced concrete, beneath which shall be installed a liner/leachate collection system as outlined in Specification No. 25.
5. The lined contaminated soil storage facilities shall be housed and provided with a roof and effectively sealed to prevent the infiltration of any liquids into the underlying landfill cover system. There shall be no accumulation of leachate in the LCRS above the liner; any leachate encountered in the LCRS system during inspection shall be pumped out immediately.
6. Unsaturated zone monitoring at the TSTF will not be required as the LCRS shall perform the equivalent immediately above the final cover system of the WCCCL.
7. Landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water due to migration into the soil remediation facility. A landfill gas detection system shall be installed in the TSTF in conjunction with the LCRS.
8. The operators shall remove and relocate untreated waste streams which are in violation of these requirements.

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9. Any untreated waste removed from the site for disposal shall be disposed of only at a legal disposal site. Any untreated waste transported from the site shall not be permitted to leak or otherwise escape to the ground or to a water course en route to the disposal site. For the purposes of these requirements, a legal site is one for which requirements have been adopted by a Regional Water Quality Control Board and which is in full compliance therewith.
10. Dust emissions shall not cause a nuisance.
11. Non-contact zone water from storm runoff shall be diverted around the treatment site. Oil-water separators shall be included in the on-site storm drainage lines. The separators will ensure that any silts, grit, or free floating oils that may enter the on-site storm water drains will not leave the site. Solids and oil collected in the separators shall be removed and returned to the contaminated soil pile for thermal treatment. All contact-zone water runoff from paved portions of the facility shall be directed through an oil-water separator on-site.
12. The discharger shall operate the waste management facility so as not to cause a statistically significant difference to exist between water quality at the compliance points and the background water quality as a result of operation of the TSTF and landfilling of thermally treated soils.
13. The discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive officer.
14. The discharger shall maintain all devices or designed features, installed in accordance with this order such that they continue to operate as intended without interruption.
15. The discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of containment structures, and monitoring facilities for the TSTF can be determined throughout the operation and post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
16. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure which threatens the integrity of containment features of the TSTF, HWMF, or the WCCCL shall be promptly corrected after approval of the method and schedule by the Executive officer.
17. Treated soil may be discharged only to the WCCCL, and shall not be placed in an area where it may come into contact with landfill leachate or below the 15 foot elevation

(msl). Treated soil may be used as foundation material for the final cover or as interim/daily cover at the WCCCL.

DESIGN OF WASTE MANAGEMENT UNIT - FINAL COVER AND CONTAINMENT (WCCCL)

18. A subsurface hydraulic barrier shall be located along the outside perimeter of the WCCCL. The hydraulic barrier shall have permeability values of 1×10^{-6} cm/sec or less as determined by in-situ testing, and shall be not less than 2 feet thick. In those portions of the TSTF area adjacent to the HWMF, the slurry wall between the Class I and Class II facilities shall have permeability values of 1×10^{-7} cm/sec or less and a minimum thickness of 3 feet.
19. The final cover shall meet all regulatory permeability requirements and will be placed underneath all components of the soil remediation facility, and over the existing interim cover throughout the remainder of the WCCCL. This cover shall include the following components:
 - A two-foot thick foundation layer comprised of clean soil or treated from the TSTF, placed above compacted waste;
 - A one-foot thick, low permeability clay layer with a minimum permeability value of 1×10^{-6} cm/sec or less;
 - A one-foot thick, protective soil/vegetative layer.
20. Slope Stability: The following specifications and components shall be included in the final cover design to achieve the necessary factors of safety for slope stability in the vicinity of the TSTF and the containment systems for the Class II WCCCL and the Class I HWMF. These specifications and components are as follows:
 - The final cover of WCCCL and the foundation of the TSTF shall be designed and constructed so as to achieve both short-term, and long-term, steady state and seismic stability factors of safety of 1.5 or greater.
 - Modifications shall be made to surface elevations in the area of the Class I slurry wall along the southern boundary of the TSTF, such that the slurry wall will not have any adverse impact that might impair its containment capabilities.

Documentation of stability analysis of the final design for both of the above components shall be provided to the Board as specified in Provision No. 7.

21. Landfill Settlement: The discharger shall prevent differential settlement within the underlying WCCCL from impacting the containment systems of either the landfill itself or the TSTF. This settlement stability shall be achieved through the use of a

geogrid added as a component to the final cover to prevent "punching" failure of individual footings due to differential settlement in the landfill beneath the TSTF. The grid shall underlie both the contaminated soil receiving area and the thermal treatment unit itself, and displace differential settlement over the entire area covered by the biaxial geogrid. Drainage capability within the LCRS shall not be diminished as a result of differential settlement in the underlying landfill.

22. Landfill Gas Collection: A gas collection system shall be installed beneath the Contaminated Soil Receiving area. The design shall prevent the buildup of landfill gas beneath the final cover and the Contaminated Soil Receiving area.

DESIGN OF WASTE TREATMENT UNIT - TSTF

23. Acceptance Standards: Acceptance standards are outlined in Finding No. 33. The following additional acceptance standards shall be implemented and reviewed prior to determining if soil is acceptable for treatment:

- If there is any uncertainty as to the origin of the soil arriving for treatment, it shall be considered non virgin/industrial soil (Type 2) and analyzed as such prior to being considered for acceptance.
- If total metals concentrations exceed 10 times the STLCL, then the WET test shall be performed. Only non-hazardous soils will be accepted for treatment and/or disposal.
- If soil is from a tank area that may have contained leaded gasolines, the soil will be analyzed as a Virgin petroleum product Source (Type 1), but total lead (EPA 7000 series) will be added to the list of analytes and the Type 2 metals procedure will be followed for this constituent. The WET test will be performed for lead as detailed in the Finding No. 33, if necessary.

24. Treatment Standards: Output soil from the Thermal Treatment Unit shall be confirmed treated to the following levels by analyses at a California certified laboratory for organic compounds and lead:

<u>Parameter</u>	<u>Method</u>	<u>Acceptance limit</u>
TPH	8015 (modified for gas and diesel)	10.0 mg/L
VOCs (sum)	8020	0.10 mg/L
Benzene	8020	0.010 mg/L
Toluene	8020	0.10 mg/L
Ethylbenzene	8020	0.10 mg/L
Xylenes	8020	0.10 mg/L

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Treated soil that does not meet these acceptance limits shall be returned to the soil receiving and handling area for retreatment. All treated soil meeting acceptance limits shall be disposed of in the Class II landfill.

25. Leachate Collection and Removal System: The components of the liner/Leachate Collection and Removal System (LCRS) are detailed as follows and shown in Figure 4:

- The Soil Receiving area shall be entirely underlain by a minimum upper working surface of 6 in. of reinforced concrete, beneath which shall be installed a blanket-type LCRS. The LCRS shall consist of (1) 6 in. filter or geotextile, (2) 12 in. drain or geonet, and (3) a primary geomembrane (HDPE with 60 mil minimum thickness). Leachate will drain to a perforated collection pipe which in turn drains towards a main leachate collection header and then gravity drain into the leachate holding tank;
- Included as a part of the LCRS, the perforated HDPE pipes shall be placed within a one foot thick highly permeable drainage layer, and designed to prevent the buildup of any hydraulic head within the system;
- A non-woven geotextile will be placed above the LCRS drainage layer. Both bottom and top surfaces of the LCRS will have a minimum 3% slopes toward the drain line; and
- A gas detection system will be incorporated into the LCRS.

The contaminated soil receiving and handling area will be designed to accommodate an average of 20,000 tons of contaminated soil within the containment building.

26. Surface runoff from any portion of the facility, with the exceptions of building roof and the unpaved portions of the treated stockpile area, shall be controlled by sloped asphalted surfaces, and directed through one of two oil/water separators near the boundaries of the facility. These oil/water separators shall be designed to accommodate the 25 year, 24-hour precipitation event at this location.
27. Soil Receiving and Storage Area: The Contaminated Soil Receiving and Storage area will include the following components:
- The Contaminated Soil Receiving and Storage area shall be entirely enclosed in a metal and concrete building to prevent rain water from coming in contact with contaminated soil; and
 - An LCRS shall underlie the entire Receiving and Handling building.

MONITORING PROGRAM

28. Monitoring requirements for the LCRS and the TSTF are specified in the Discharge Monitoring Plan. A summary of the initial Discharge Monitoring Program (See Attachment A) follows:
 - a. The LCRS will be monitored monthly for the presence of leachate. Leachate will be analyzed for constituents listed in the Discharge Monitoring Program.
 - b. Surface Water Monitoring will be conducted at a frequency, and analyzed for the parameters outlined in the Discharge Monitoring Plan.
29. The discharger shall maintain all waste acceptance data at the facility and allow Regional Board staff access during routine inspections.

C. PROVISIONS

1. The discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order or as provided below.
2. The discharger shall submit quarterly monitoring reports in accordance with the attached **Discharge Monitoring Program** (Attachment A).
3. The discharger shall submit a detailed **Post Earthquake Inspection and Corrective Action Plan** acceptable to the Executive Officer, to be implemented in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater, at or within 30 miles of the facility. The report shall describe the containment features, and groundwater monitoring potentially impacted by the static and seismic deformations of the facility. The plan shall provide for reporting results of the post earthquake inspection to Board within 72 hours of the occurrence of the earthquake. Immediately after an earthquake event causing damage to the facility structures, the corrective action plan shall be implemented and this Board shall be notified of any damage. The report shall be due within three months of adoption of this Order.

REPORT DUE DATE: Within 3 months of the adoption of this Order

4. The discharger shall submit a **Contingency Plan** acceptable to the Executive Officer. This Plan shall be implemented in the event of a leak or spill from the leachate facilities. The discharger shall give immediate notification to the San Francisco Bay Regional Water Quality Control Board and the Local Enforcement Agency (LEA).

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The discharger shall initiate its corrective action plan to stop and contain the migration of pollutants from the site.

REPORT DUE DATE: Within 3 months of adoption of this Order.

5. The discharger shall submit to this Board evidence of an **Irrevocable Closure Fund** or provide other means acceptable to the Executive Officer. This Fund is to ensure closure and postclosure maintenance of the TSTF unit, pursuant to Section 2580(f) of Chapter 15, and must provide sufficient funds to properly close the TSTF and for any post-closure monitoring, leachate management, and maintenance of the site. For purposes of planning the amount of the fund, the discharger shall assume a post-closure period of at least 30 years. However, the post-closure maintenance period shall extend as long as waste post a threat to water quality.

REPORT DUE DATE: Within 3 months of the adoption of this order

6. The discharger shall submit a **Final Cover Construction Quality Assurance Plan** acceptable to the Executive Officer pursuant to the specifications of this Order. The Final Cover Construction Quality Assurance Plan shall be consistent with this Order, as well as providing method descriptions and frequency of construction quality assurance testing as part of cover construction.

REPORT DUE DATE: Prior to the commencement of construction

7. The discharger shall submit **Facility Construction Design Details** acceptable to the Executive Officer pursuant to the specifications of this Order. The Facility Construction Design Details shall be consistent with this Order and shall reflect the final design specifications for the TSTF. Included in the Facility Construction Design Details will be the final design and analysis results for slope and seismic stability and settlement analysis.

REPORT DUE DATE: Prior to the commencement of construction

8. The discharger shall submit **Final Construction Details (FCD)** acceptable to the Executive Officer pursuant to the specifications of this Order. These details can be provided to the Board in two deliverables as follows:
 - a. A **Certification Letter** will be submitted to the Board for approval at the completion of construction of the TSTF. This letter will certify that the facility was constructed in compliance with the this Order and submitted Facility Construction Details as specified in Provision No. 7. This certification letter must be received by the Board prior to start up of the facility operations. The Executive Officer may then provide conditional approval for start up and

Waste Discharge Requirements
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operation of the TSTF, contingent on the discharger meeting the conditions detailed in Provision No. 8.b.

- b. The **FCD** should provide as-built drawings and construction details for the various components of the TSTF, including but not limited to detailed specifications for construction of the LCRS, surface water control, composite final cover (including stability/grid components), landfill gas detection system, and other containment and monitoring system installations, and should include Quality Assurance & Quality Control Procedures (QA/QC) and testing results for all aspects of construction and installation. These construction details should include detailed specifications regarding the sequence of construction of the various segments of the project, and provide sufficient detail about how the various systems of the TSTF will interface structurally. The Final Construction Details must be determined to be consistent with this Order by the Executive Officer prior to final approval for operation of the TSTF.

REPORT DUE DATE: The Certification letter shall be submitted to and acceptable to the Executive Officer prior to the receipt of any soils into the TSTF (Provision No. 8.a.). The Final Construction Details report (Provision No. 8.b.) will be due to the Regional Board 45 days after approval to receive soils for treatment has been issued by the Executive Officer.

9. All reports pursuant to these Provisions shall be prepared under the supervision of a registered civil engineer, California registered geologist, or certified engineering geologist.
10. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.
11. The discharger shall file with the Regional Board Discharge Monitoring Reports performed according to any Discharge Monitoring Program issued by the Executive Officer.
12. If the discharger elects to allow infrequent dumping of incoming waste soil outside the Contaminated Soil building, the LCRS liner system (as outlined in Specification No. 25) shall extend beneath any portion of the TSTF that receives or stores contaminated soil. In addition, the discharger shall notify the Board in writing, 48 hours before any anticipated receipt of waste outside the Contaminated Soil building. This notification shall indicate quantity of soil to be located outside and anticipated duration of event. All contaminated soil placed on the outside portion of the lined facility shall be moved inside the Contaminated Soil building by the end of the calendar day. Soil dumping outside the Contaminated Soil building shall not occur on rainy or overly windy days.

Waste Discharge Requirements
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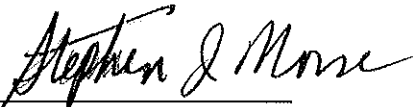
13. The discharger shall file with this Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries of the TSTF area or the ownership of the site.
14. The discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste containment facilities (WCCCL and/or HWMF) or precipitation and drainage control structures.

REPORT DUE DATE: Immediate

15. The discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
16. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems which arise in the future as a result of this soil treatment or related operations.
17. The discharger shall permit the Regional Board or its authorized representative, upon presentation of credentials:
 - a. Immediate entry upon the premises on which soils are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this order.
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this order or by any other California State Agency.
 - d. Sampling of any untreated or treated soils and/or groundwater governed by this order.
18. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.
19. This Order is subject to Board review and updating, as necessary, to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics.

Waste Discharge Requirements
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I, Stephen I. Morse, Acting Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 23, 1995.



Stephen I. Morse
Acting Executive Officer

Attachments: Figure 1. Site Location Map
Figure 2. Facility Map - WCCCL
Figure 3. Thermal Soil Treatment Facility Plan
Figure 4. Leachate Collection and Removal System - TSTF
Attachment A - Discharge Monitoring Program

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References:

Pyke, Robert, 1995, "West Contra Costa Sanitary Landfill Class II Stability Analyses", prepared for West Contra Costa Sanitary Landfill, Richmond, California, 1995.

Wahler Associates, 1993, "Deformations and Slope Stability Analyses," prepared for West Contra Costa Sanitary Landfill, Richmond, California, January, 1993.

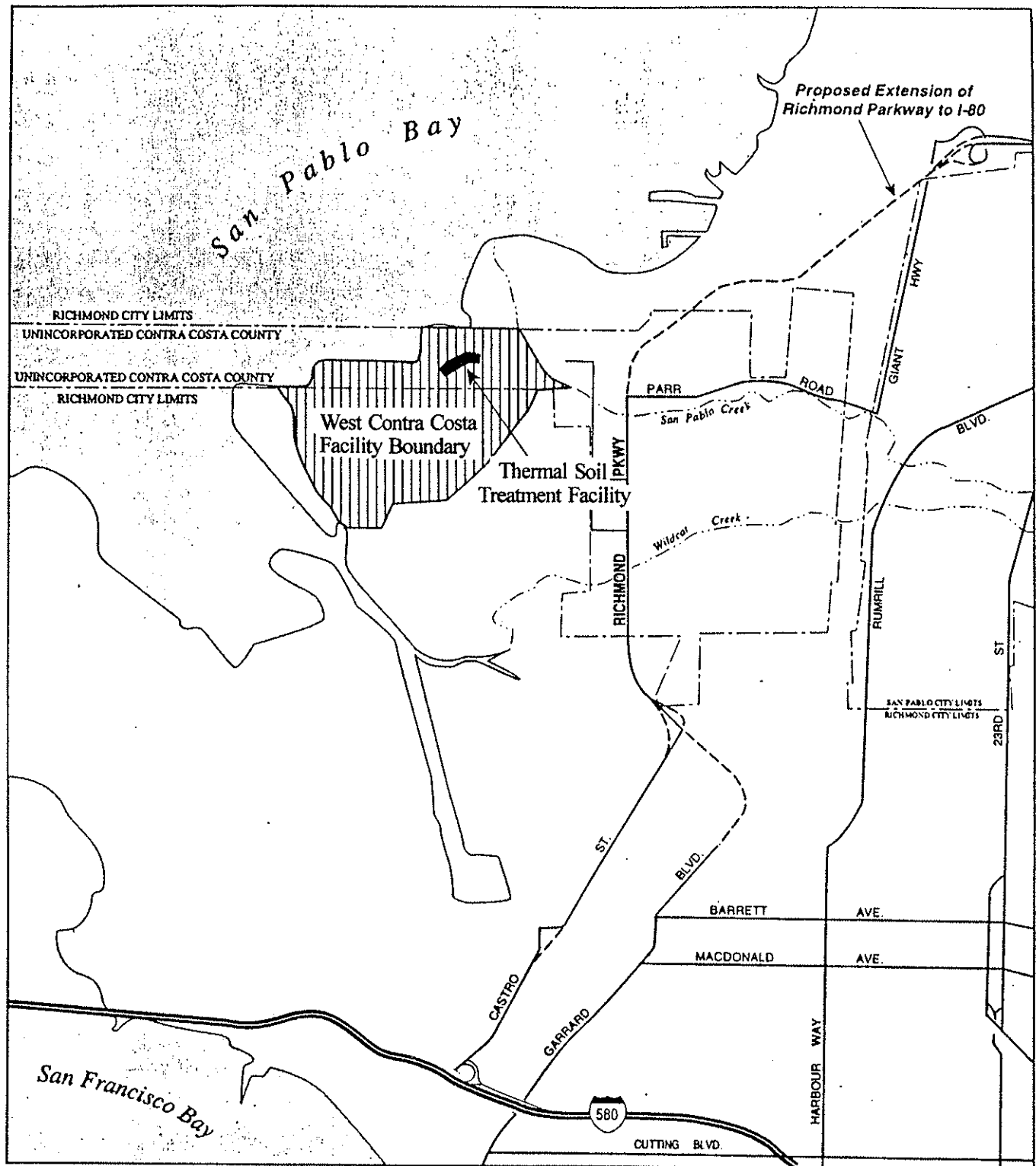
West Contra Costa Sanitary Landfill, Inc, 1995, Class II Landfill Final Closure Plan, West Contra Costa Sanitary Landfill.

West Contra Costa Sanitary Landfill, Inc and TPS Technologies, Inc., 1995, Revised Report of Waste Discharge, West Contra Costa Sanitary Landfill, Soil Remediation Facility.

Woodward-Clyde Consultants, 1995, TPS Technologies, Inc., Soil Remediation Facility, Richmond, California.

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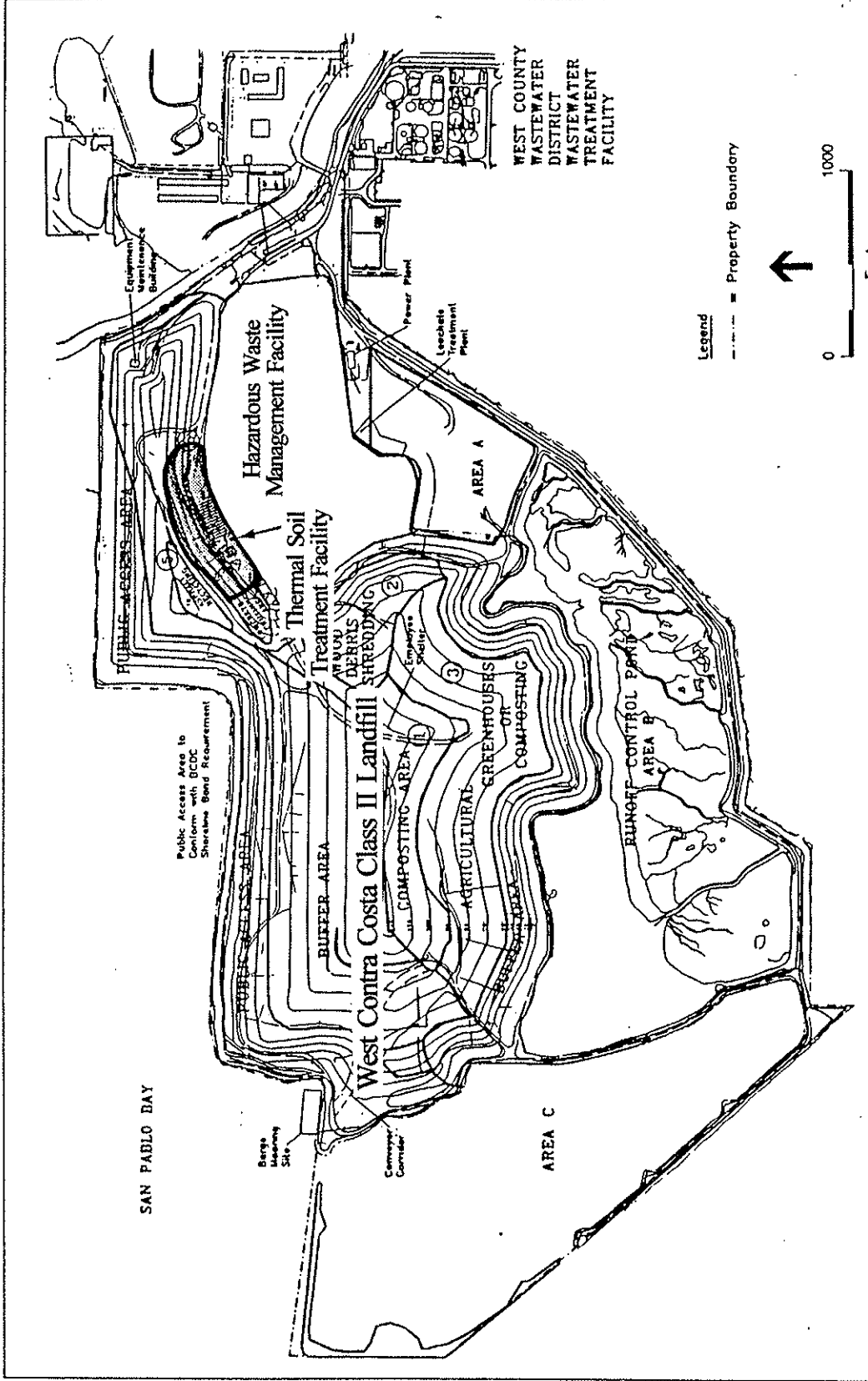
FIGURES



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

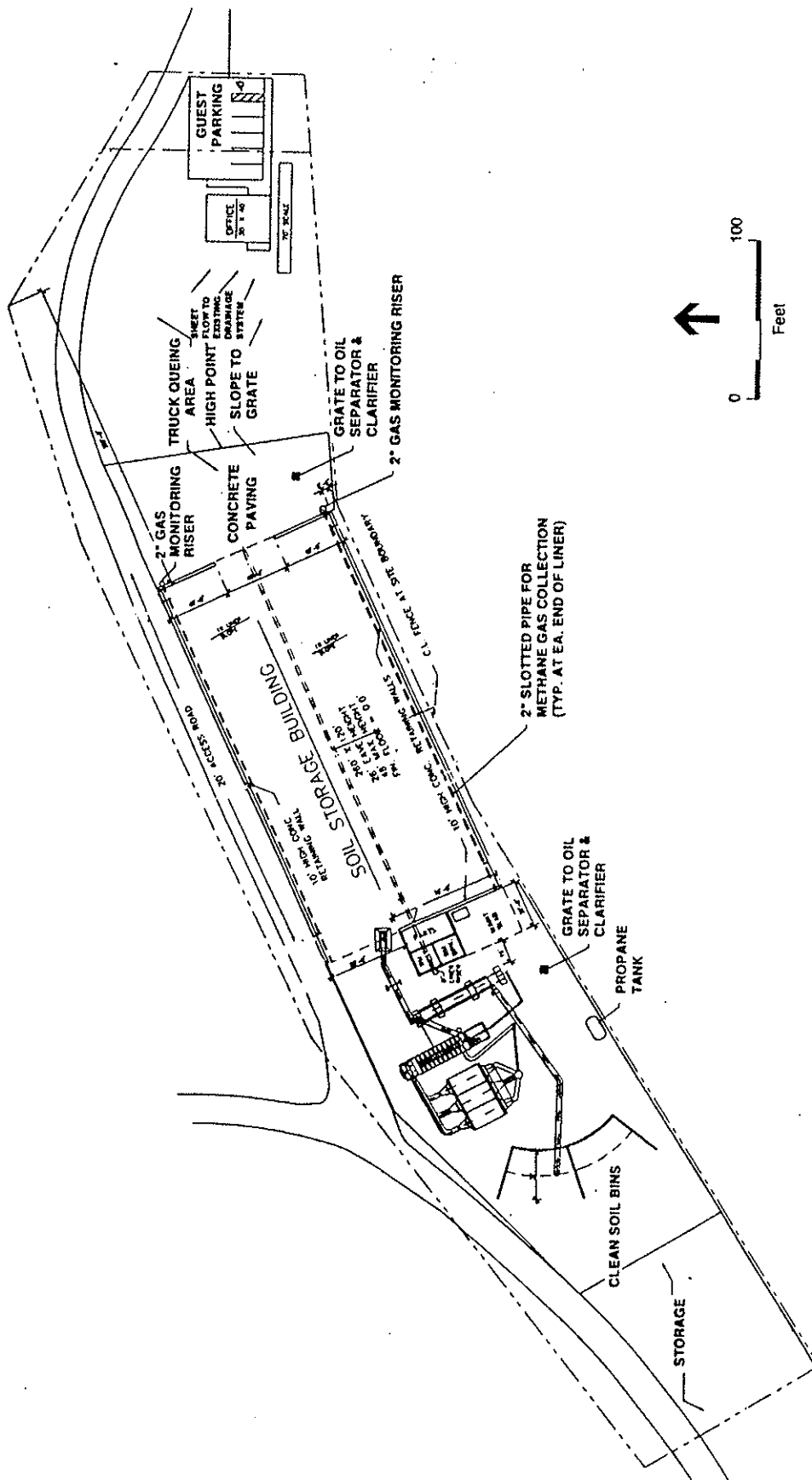
Figure 1
Site Location Map
Thermal Soil Treatment Facility
West Contra Costa Class II Landfill
Richmond, Contra Costa County

DRAWN BY: JMR DATE: 8.23.95 DRWG. NO. 96/75-1



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

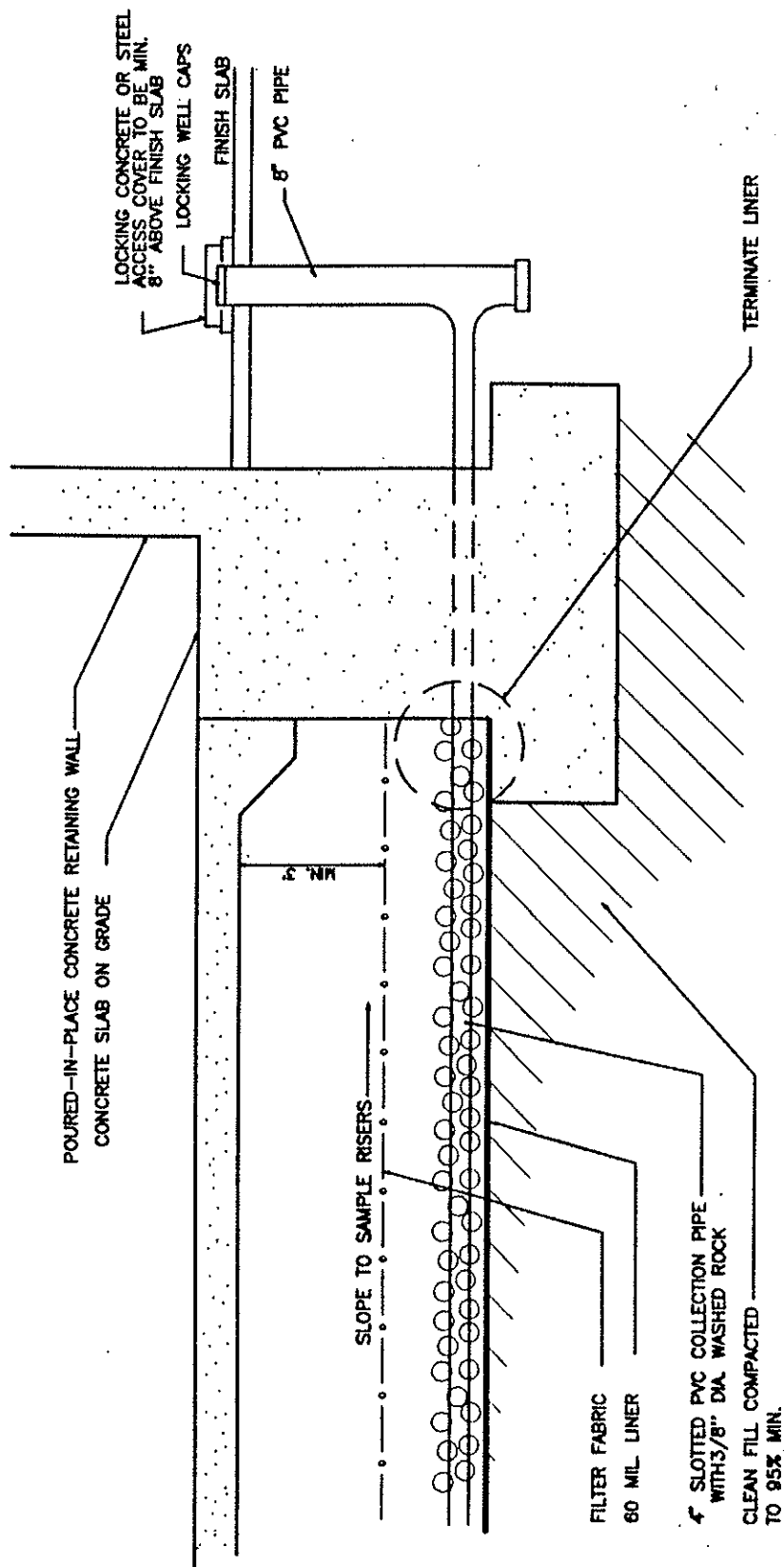
Figure 2
Facility Map - West Contra Costa Class II Landfill
Thermal Soil Treatment Facility
Richmond, Contra Costa County



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Figure 3
Thermal Soil Treatment Facility Plan
West Contra Costa Class II Landfill
Richmond, Contra Costa County

DRAWN BY: JMK DATE: 8-23-95 DRWG. NO. 95175-3



STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Figure 4

Leachate Collection and Removal System
Thermal Soil Treatment Facility
West Contra Costa Class II Landfill
Richmond, Contra Costa County

DRAWN BY: JWP DATE: 8.23.95 DRWG NO. 95175-4

Waste Discharge Requirements
West Contra Costa Class II Landfill, Thermal Soil Treatment Facility
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ATTACHMENT A

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

DISCHARGE MONITORING PROGRAM

FOR

**WEST COUNTY LANDFILL, INC., TPS TECHNOLOGIES, INC.,
RICHMOND SANITARY SERVICES, AND
WEST CONTRA COSTA SANITARY LANDFILL, INC.
THERMAL SOIL TREATMENT FACILITY
WEST CONTRA COSTA CLASS II LANDFILL
RICHMOND, CONTRA COSTA COUNTY**

ORDER NO. 95-175

CONSISTS OF

PART A

AND

PART B

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Discharge Monitoring Program is issued in accordance with Provision C.2 of Regional Board Order No. 95-175.

The principal purposes of a discharge monitoring program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the discharger in complying with the requirements of this Order.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, San Pablo Creek and San Pablo Bay are considered receiving waters.
3. Standard observations refer to:

Receiving Waters

- 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area.
 - 2) Discoloration and turbidity: description of color, source, and size of affected area.
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 4) Evidence of beneficial use: presence of water associated wildlife.
 - 5) Flow rate.
 - 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
- b. Perimeter of the waste management unit.
- 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate. (Show affected area on map)
 - 2) Evidence of combustible gas leaving the waste management unit.
 - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 4) Evidence of erosion and/or daylighted refuse.
- c. The waste management unit or treatment facility.
- 1) Evidence of ponded water at any point on the waste management facility.
 - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source.
 - 3) Evidence of erosion and/or daylighted refuse.
 - 4) Standard Analysis (SA) and measurements are listed in Part B.1.A below.

D. SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analyses, and observations in the following media:

1. Leachate and surface water;
2. Petroleum contaminated soils; and
3. Thermal treated soils.

and per the general requirements specified in this Order.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Calculation of results.
6. Results of analyses, and detection limits for each analysis.

F. REPORTS TO BE FILED WITH THE BOARD

1. REGULAR REPORTING

Written detection monitoring reports, contaminated and treated soil sampling reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.3 below. The reports shall be comprised of the following:

a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

b. Each **Monitoring Report** shall include a compliance evaluation summary. The summary shall evaluate leachate and surface water monitoring for the reporting period including:

- Leachate and surface water observations, measurements, and analytical results (if any) for the reporting period. These observations include (as applicable): the method and time of water/leachate level measurement, the type of pump used for purging, method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging,

calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, recovery time, and method of disposing of the leachate.

- Additionally, the following components should be included in the Self Monitoring Report (as applicable): a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.

- c. Each **Soil Treatment Process Report** submitted to the Board shall contain the following information:
 - 1. A tabular list of the sources, types and volumes of all wastes to be treated or received daily. (Each source of waste must be identified according to location and type.)
 - 2. TPS shall certify either by the procedures contained in section 66260.200, Title 22 CCR, or based on acceptable analytical data, that each load of waste to be treated is nonhazardous.
 - 3. A tabular list of dates, volumes and locations of the ultimate disposal of any treated or partially treated wastes that were not processed, or of materials that were used as daily cover. If all the material produced during the monitoring period was used, a statement to that effect shall be submitted with each monitoring report.
 - 4. A tabular list of the names and addresses of the waste generators and haulers during the quarter.
 - 5. All analytical results and the dates the samples were taken and analyzed during the quarter.
 - 6. A certification that all wastes received, processed, handled, or disposed off were in compliance with the Board's requirements.
- d. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- e. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.

1. The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
2. In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is outside EPA or approved laboratory established limits; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

2. CONTINGENCY REPORTING

- a. A report shall be made in writing to the Board within seven days of determining that a statistically significant concentration has been detected in a surface water or leachate sample. Notification shall indicate what compound(s) has/have been detected and the respective concentration(s). The discharger shall immediately resample at the compliance point where this difference was been found and re-analyze.
- b. If resampling and analysis confirms the earlier finding of a statistically significant concentration, the discharger must submit to the Board an amended Report of Waste Discharge as specified in Section 2550.8(k)(5) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Section 2550.9 of Chapter 15.
- c. Within 180 days of determining statistically significant evidence of a release, submit to the regional board an engineering feasibility study for a Corrective Action Program (CAP) necessary to meet the requirements of Section 2550.10. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern.

3. REPORTING

By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a 3 1/2" computer data disk, MS-DOS ASCII format, tabulating the year's data.

- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A map showing the area, if any, in which the treated soils were used during the previous calendar year.
- d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- e. A written summary of combustible gas analyses from gas detection system monitoring indicating any gas accumulation, migration beyond or the TSTF.
- f. A written summary of contaminated soil and treated soil sampling analyses indicating values of parameters analyzed, total volumes, and locations of the ultimate disposal of treated wastes, any untreated or partially treated wastes that were not processed, or material that was used as daily cover and or foundation cover material.
- g. A review of financial assurance and certification that it is still in effect and adequate.

4. FAILURE TO FURNISH REPORTS

Any person failing or refusing to furnish technical or monitoring reports or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

5. WELL LOGS

All boring log and monitoring well construction logs shall be submitted for each well established for this monitoring program, in addition to a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.

Part B

1. DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. SOIL SAMPLING AND ANALYSES - Report Quarterly

Soil sampling and analyses shall be performed as outlined below.

1. Incoming Wastes - Soils will be sampled before acceptance for treatment. Discrete samples shall be taken at the rates stated below:

- One sample for 100 cubic yards or less;
- Three samples for 500 cubic yards or less;
- Five samples for 1000 cubic yards or less; and
- One additional sample for each additional 500 yards greater than 1000 cubic yards.

2. Treated Material (in stockpiles) - Analyses shall be run on treated soil as follows:

- One sample shall be collected for each 20 tons of soil treated. Ten consecutive samples, representing 200 tons, will be composited into one sample, or at a minimum one sample per 12 hours or fraction thereof;
- Each composite sample shall be analyzed for the following:

<u>Parameter</u>	<u>Units</u>	<u>Method</u>
Total Petroleum Hydrocarbons (TPH)	mg/kg	EPA 8015 (Modified for gas or diesel)
Benzene, Toluene, Xylenes, Ethylbenzene	mg/kg	EPA 8020

- Once per quarter, a random sample shall be collected and sampled for Volatile Organic Compounds to verify that the sum is within the Discharge Specifications of this Order. Additionally, this sample will be analyzed for total and soluble (WET) lead.

B. ON - SITE OBSERVATION - Report Quarterly

STATION	DESCRIPTION	OBSERVATION	FREQUENCY
V - 1 thru V - 'n'	Located on the TSTF site as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Monthly
P - 1 thru P - 'n' (peri- meter)	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the TSTF.	Standard observations for the perimeter.	Monthly

C. FACILITIES MONITORING - Inspect Monthly, Report Quarterly.

The Discharger shall inspect all facilities to ensure proper and safe operation and report quarterly. The facilities to be monitored shall include, but not be limited to:

- a. Contaminated soil storage building;
- b. Clean soil storage area;
- c. Soil Treatment area;
- d. Drainage runoff control structures;
- e. Oil/water separator;
- f. Perimeter diversion channels; and
- g. Leachate Collection and Removal System.

D. LEACHATE AND SURFACE WATER MONITORING - Report Quarterly

Leachate and surface water shall be monitored as outlined below on a quarterly basis at the locations shown in Figure A-1 (Surface water). The Regional Board will notified if liquid is present in the LCRS as determined during monthly inspection by the discharger. Surface water shall be sampled during the first storm event each quarter that generates surface runoff. The LCRS shall be sampled quarterly if liquid is present.

Monitoring Points:


Monitored Media	Monitoring Point
Leachate	LTSTF-1 (LCRS)
Surface Water	SWTSTF-1, SWTSTF-2 (downgradient from Oil/Water separators)

Samples collected from the monitoring points listed in the table above shall be analyzed for the following parameters:

<u>Parameter</u>	<u>Method</u>
Total Petroleum Hydrocarbons (TPH)	EPA 8015 (Modified for gas or diesel)
Benzene, Toluene, Xylenes, Ethylbenzene	EPA 8020
Total & Soluble Lead	EPA 7420
Total Dissolved Solids	Standard Methods

I, Stephen I. Morse, Acting Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

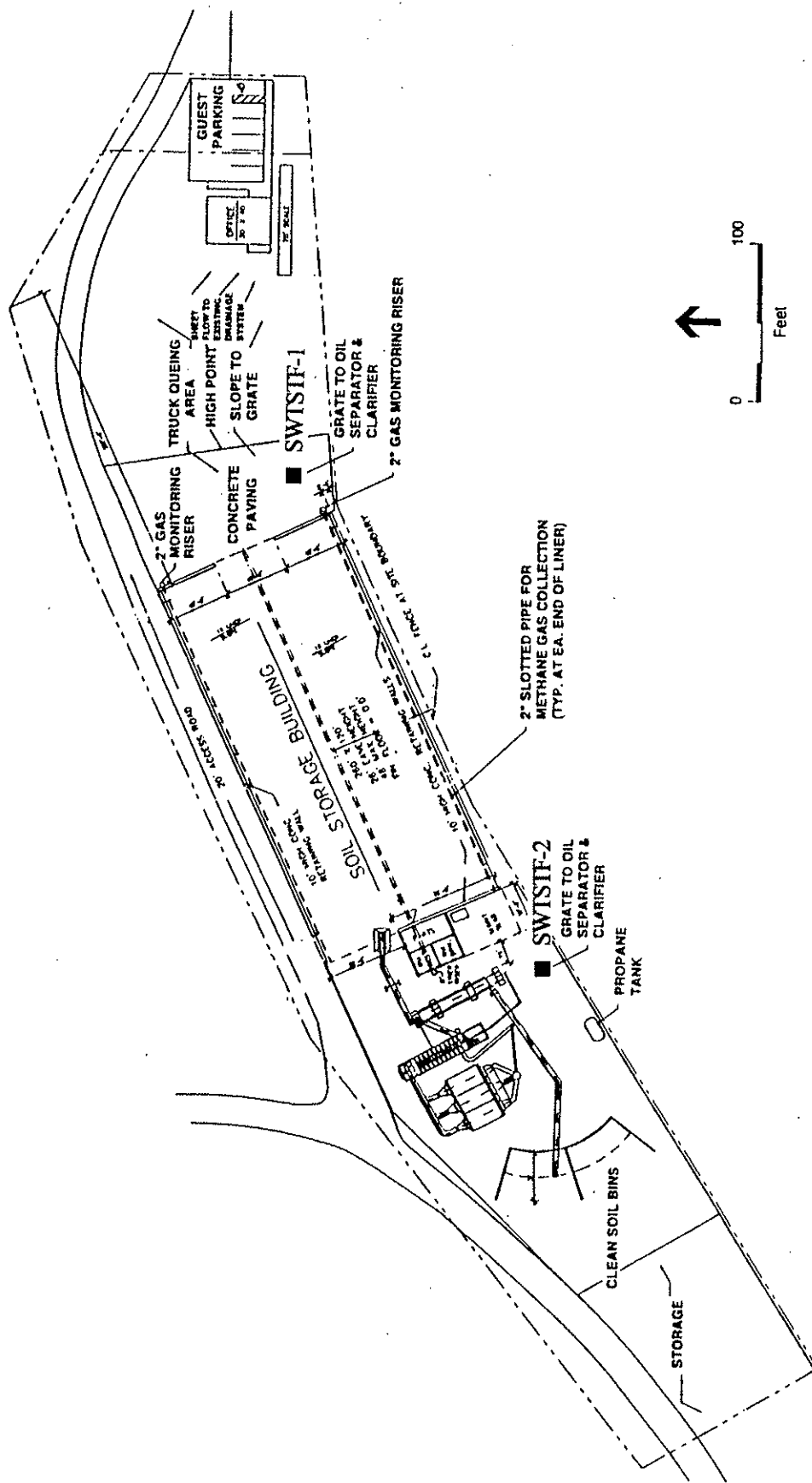
1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 95-175.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.



Stephen I. Morse
Acting Executive Officer

Date Ordered: August 23, 1995

Attachment: Figure A-1 - Surface Water Sampling Location Map



EXPLANATION

- SWTSIF-1 Surface water sampling location

Surface water sampling location just downgradient from oil/water separator

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Figure A-1
Surface Water Sampling Location Map
Thermal Soil Treatment Facility
West Contra Costa Class II Landfill
Richmond, Contra Costa County

DRAWN BY: JME DATE: 8/23/95 DRWG. NO. 95175-A1